ARMY RECOGNIZES OUTSTANDING R&D ORGANIZATIONS

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Since 1975, the Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASAALT) has presented annual Research and Development Organization (RDO) of the Year Awards to Army organizations in recognition of outstanding technical and managerial programs implemented during the preceding fiscal year. Specifically, RDO awards recognize the best research and development (R&D) programs and best-managed organizations that enhance the capability and readiness of Army operational forces and the national defense and welfare of the United States. At an awards ceremony at the Pentagon Sept. 11, 2000, ASAALT Paul J. Hoeper presented the annual awards to selected organizations for FY99 achievements.

RDO Award recipients were selected by an evaluation committee chaired by the Director for Research and Laboratory Management, Office of the ASAALT, and composed of highly qualified members from the Army and DOD science and technology communities. The committee evaluated both written nominations submitted through each organization's major command and verbal presentations from each organization's commander or director. Organization rankings were based on accomplishments and impact; organizational vision, strategy, and plan; resource management; and continuous improvement.

Based on the review of accomplishments, the evaluation committee selected two RDO of the Year Award recipients, one in the Large Laboratory Category (600 employees or more) and one in the Small Laboratory Category (less than 600 employees).

Additionally, the evaluation committee selected two organizations (one large and one small) for Army RDO Excellence Awards in recognition of FY99 research accomplishments.

Army RDO Of The Year—Large Laboratory Category

The winner selected for the *RDO of the Year Award—Large Laboratory Category* was the U.S. Army Tank-automotive and Armaments Command's Armament Research, Development and Engineering Center (TACOM-ARDEC), Picatinny Arsenal, NJ. TACOM-ARDEC and its predecessor organizations have a distinguished history in armaments and munitions development and production dating back to the Revolutionary War.

TACOM-ARDEC's mission is to provide research, product development, and full life-cycle engineering for ammunition, weapons, sophisticated fire control, explosives, and propellants; and pollution-prevention technology. TACOM-ARDEC supports a $1.4 billion annual program at Picatinny, including key program executive officer and program manager customers, and directly oversees a $600 million program for life-cycle materiel research, development, and acquisition efforts.

TACOM-ARDEC's most significant FY99 technical accomplishment was development of the Explosively Formed Penetrator and shaped-charge warheads that are currently yielding a 500-percent increase in penetration capability and a 400-percent increase in area lethality in selectable multimode and multitarget configurations. Two other significant technological breakthroughs in FY99 were the transition of the world's first environmentally friendly "green" propellant into the Modular Artillery Charge System and the successful synthesis of the octanitrocubane explosive molecule that promises to be a source of unprecedented explosive energy.

To accomplish its mission, TACOM-ARDEC has state-of-the-art world-class facilities and equipment. These include the Armament Technology Facility; the Advanced Warhead Development Facility (dedicated May 15, 2000); and the Armaments Software Engineering Center.

TACOM-ARDEC's quality work was achieved through comprehensive management that included use of integrated product teams, peer reviews, a systems measurement review, program reviews, and a customer satisfaction program. In fact, more than 700 TACOM-ARDEC employees were recognized by external customers in FY99. Three times previously, TACOM-ARDEC received RDO of the Year Awards (1986, 1995, and 1999) and RDO Awards for Excellence (1996, 1997, and 1998).

Army RDO Of The Year—Small Laboratory Category

The winner selected for the *RDO of the Year Award—Small Laboratory Category* was the U.S. Army Medical Research Institute of Chemical Defense (USAMRICD), Aberdeen Proving Ground, MD. Applying cutting-edge technology, state-of-the-art training techniques, and partnerships with the private sector, USAMRICD made significant advances in developing medical countermeasures to chemical warfare agents (CWA) and training medical personnel in the management of chemical casualties.

To provide the warfighter with medical countermeasures to CWA, USAMRICD determined the mechanisms and neurochemical events by which nerve agents induce a unique seizure state that is refractory to standard clinically used anticonvulsants. In addition, USAMRICD identified a more rapidly and longer acting drug to control seizure activity, and potent, centrally acting, anticholinergic drugs to control nerve agent-induced *status epilepticus* (SE). USAMRICD also initiated a new program to identify compounds capable of preventing or reducing nerve agent-induced brain damage.

The incapacitating effect of exposure to vesicating agents such as sulfur mustard (HD) has been a concern for U.S. troops for more than 50 years. Recently, USAMRICD scientists identified major mechanisms underlying the vesicating action of HD and developed a research strategy to address these mechanisms. This strategy led to the identification of the first drugs showing significant efficacy in reducing HD injury. Among these are protease inhibitors that protected a mouse ear from HD-induced lesions and synthetic corticosteriods and antibiotics

that protected a rabbit cornea from HD-induced damage. A topical skin protectant (TSP) that serves as a physical barrier to blistering agents was also transitioned to advanced development and approved by the Food and Drug Administration. More recently, the institute made advances in developing a *reactive* TSP that serves not only as a barrier cream but is capable of detoxifying both vesicating and nerve CWA.

USAMRICD was also cited for conducting an award-winning, live, multiday satellite broadcast: *Medical Response to Chemical Warfare & Terrorism*. Approximately 2.5 million viewers worldwide watched this broadcast, and nearly 40,000 participants received continuing medical education credits for this training.

Army RDO Award Ceremony attendees shown left to right are Dr. A. Michael Andrews, Deputy Assistant Secretary of the Army for Research and Technology; COL James A. Romano Jr., Commander, USAMRICD; Michael Devine, Technical Director, TACOM-ARDEC; Paul J. Hoeper, ASAALT; Dr. William C. McCorkle, Director, AMRDEC; COL Edward M. Eitzen, Commander, USAMRIID; and Dr. Walter F. Morrison, Director for Research and Laboratory Management, Office of the ASAALT.

Army RDO Award For Excellence—Large Laboratory Category

The recipient of the *RDO Award for Excellence—Large Laboratory Category* was the then U.S. Army Missile Research, Development, and Engineering Center (MRDEC), a major element of the then U.S. Army Missile Command (MICOM), Redstone Arsenal, AL. MRDEC provided the technical expertise to enable the Services to be smart buyers and users of missiles, rockets, unmanned vehicles and their unique command and control systems, directed energy weapons, nonlethal technology, computer resources embedded in battlefield automated systems, and related models and simulations. (Note: subsequent to the period of performance for these awards, the U.S. Army Aviation Command and MICOM merged to become the U.S. Army Aviation and Missile Command. Simultaneously, the Aviation RDEC and the Missile RDEC merged to form the Aviation and Missile RDEC (AMRDEC).)

During the period covered by the award, MRDEC focused on improving the affordability, survivability, and lethality of Army weapons. Most noteworthy was MRDEC's development of technologies that will revolutionize close-combat operations. Specifically, in FY99, the first successful flight of a tactical missile using a gel-propulsion system was achieved. By using the energy management properties of this system, MRDEC quadrupled an experimental missile's range above that of a currently deployed missile with the same size and weight (i.e., a Tube-launched, Optically-Tracked, Wire-guided missile). Additionally, a critical digital guidance link was demonstrated that gives the essential features of automatic target recognition, battle damage assessment, and alternate targeting capabilities after missile launch. These achievements are associated with MRDEC's Future Missile Technology Integration Program. This program is paving the way for development of a common missile that is multimission-oriented, multiplatform-compatible, and capable of attacking multitargets.

MRDEC was also recognized for demonstrating a 99.6-percent improvement in the accuracy of the Multiple Launch Rocket System via a reduction in the circular error probable from 500 meters to 2 meters. This effort was achieved with an 88-percent reduction in rockets, an 86-percent reduction in logistics burden, and an 84-percent reduction in total cost.

Army RDO Award For Excellence—Small Laboratory Category

The recipient of the *RDO Award for Excellence—Small Laboratory Category* was the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID), Fort Detrick, MD. USAMRIID is DOD's lead facility for conducting research to develop medical countermeasures against biological threats and naturally occurring diseases of military importance that require special containment. USAMRIID also trains health care professionals in the medical management of biological casualties, supports other agencies through its reference resource capabilities, provides its unique medical expertise to those responsible for U.S. bioterrorism preparedness efforts, and supports disease outbreak investigations throughout the Nation and the world.

Under the oversight of the Joint Vaccine Acquisition Program and the Joint Program Office for Biological Defense, USAMRIID has made several key advances in the development of vaccines to address biological threats. In particular, USAMRIID was cited for its strategies to develop infectious clone vaccines, recombinant protein vaccines, and multiagent vaccine platforms.

In addition to vaccines and therapeutics, development of diagnostic assays for biological agents is an important part of USAMRIID's mission. The ability to diagnose infections immediately after exposure is critical to determining whether a biological attack has occurred so that treatment may be initiated. The institute is developing state-of-the-art technologies that include reagents, protocols, and devices to support rapid identification of biological warfare and endemic disease threat agents in clinical specimens.

USAMRIID continues to train military and civilian health care providers in the recognition and treatment of biological casualties. USAMRIID's 1999 satellite broadcast, *Biological Warfare and Terrorism: The Military and Public Health Response*, was used to train approximately 18,000 health care professionals at more than 700 CONUS/OCONUS downlink sites.

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